

Claims

What is claimed is:

1. A baggage handling unit for retrofitting an existing passenger boarding bridge having a foundation, the baggage handling unit comprising:

a walkway for coupling a terminal building access port and a rotunda of an existing passenger boarding bridge so as to support passenger movement therebetween, the walkway including a baggage access port;

a support including a mounting end configured for engaging the foundation and a support end for supporting the rotunda of the existing passenger boarding bridge at a position that is horizontally displaced from the foundation;

a baggage elevating element mounted adjacent to the baggage access port of the walkway; and,

a mount for fixedly coupling the baggage handling unit to the rotunda about a point opposite an aircraft engaging portion of the existing passenger boarding bridge, such that the baggage handling unit and the rotunda are structurally attached.

2. A baggage handling unit according to claim 1, wherein the baggage handling unit is for, in use, counterbalancing the aircraft engaging portion of the existing passenger boarding bridge such that a moment imposed from the baggage handling unit to the foundation is at least partially compensated.

3. A baggage handling unit according to claim 1, wherein a portion of the baggage handling unit is cantilevered off the foundation when the baggage handling unit is in an installed condition on the foundation.

4. A baggage handling unit according to claim 1, comprising a counter-weight mounted to the baggage handling unit for at least partially counterbalancing the aircraft engaging portion of the existing passenger boarding bridge such that a moment imposed from the baggage handling unit to the foundation is at least partially compensated.

5. A baggage handling unit according to claim 1, wherein the mounting end comprises a mounting plate having a plurality of holes formed therethrough for receiving a plurality of studs arranged along the foundation.
6. A baggage handling unit according to claim 5, wherein the plurality of holes formed through the mounting plate is for receiving a plurality of studs arranged along the foundation in an industry standard number 7 bolt pattern.
7. A baggage handling unit according to claim 1, comprising a mounting plate proximate the mounting end of the support, the mounting plate having a plurality of holes formed therethrough for receiving a plurality of studs arranged along the foundation in an industry standard number 7 bolt pattern.
8. A baggage handling unit according to claim 1, wherein the baggage elevating element comprises a controllable baggage lift mechanism and a baggage enclosure, the controllable baggage lift mechanism coupled to the baggage enclosure for controllably raising and lowering the baggage enclosure between an upper station adjacent to the access port of the walkway and a lower station at a height that is disposed elevationally below the access port of the walkway.
9. A baggage handling unit according to claim 8, wherein the controllable baggage lift mechanism comprises a winch and cable mechanism.
10. A baggage handling unit according to claim 8, wherein the controllable baggage lift mechanism comprises a fluid pressure operated ram mechanism.
11. A baggage handling unit according to claim 8, comprising a controller for controlling the controllable baggage lift mechanism.
12. A baggage handling unit according to claim 11, wherein the controller comprises a pushbutton station located proximate the lower station.

13. A baggage handling unit according to claim 1, wherein the walkway comprises a controllably movable barrier for preventing persons or objects from falling through the access port of the walkway when the baggage enclosure is lowered to a lower station at a height that is elevationally below the access port of the walkway.

14. A baggage handling unit according to claim 13, wherein the controllably movable barrier comprises a roll-down door.

15. A baggage handling unit according to claim 13, comprising a safety mechanism for releasing a lock of the controllably movable barrier in dependence upon the baggage enclosure being secured at an upper station adjacent to the access port of the walkway.

16. A baggage handling unit for retrofitting an existing passenger boarding bridge having a foundation, the baggage handling unit comprising:

- a walkway for coupling a terminal building access port and a rotunda of an existing passenger boarding bridge so as to support passenger movement therebetween, the walkway including a baggage access port;

- a baggage elevating element mounted adjacent to the baggage access port of the walkway;

- a mount for structurally coupling the baggage handling unit to the rotunda opposite an aircraft engaging portion of the existing passenger boarding bridge; and,

- a support for mounting the baggage handling unit to the foundation such that the baggage handling unit at least partially counterbalances the aircraft engaging portion of the existing passenger boarding bridge, and such that a moment imposed from the baggage handling unit to the foundation is at least partially compensated.

17. A baggage handling unit according to claim 16, wherein the support is for, in use, supporting the walkway via the foundation in a cantilever-like manner such that the baggage handling unit in combination with the aircraft engaging portion of the existing passenger boarding bridge exert a force that is mostly normal to the foundation.

18. A baggage handling unit according to claim 16, comprising a counter-weight mounted to the baggage handling unit for counterbalancing the aircraft engaging portion of the existing passenger boarding bridge such that a moment imposed from the baggage handling unit to the foundation is at least partially compensated.

19. A baggage handling unit according to claim 16, wherein the support includes a mounting plate for engaging a mounting structure of the foundation.

20. A baggage handling unit according to claim 19, wherein the mounting plate includes a plurality of holes formed therethrough for receiving a plurality of studs arranged along the foundation.

21. A baggage handling unit according to claim 20, wherein the plurality of holes formed through the mounting plate is for receiving a plurality of studs arranged along the foundation in an industry standard number 7 bolt pattern.

22. A baggage handling unit according to claim 16, wherein the baggage elevating element comprises a controllable baggage lift mechanism and a baggage enclosure, the controllable baggage lift mechanism coupled to the baggage enclosure for controllably raising and lowering the baggage enclosure between an upper station adjacent to the access port of the walkway and a lower station at a height that is disposed elevationally below the access port of the walkway.

23. A baggage handling unit according to claim 22, comprising a controller for controlling the controllable baggage lift mechanism.

24. A baggage handling unit according to claim 16, wherein the walkway comprises a controllably moveable barrier for preventing persons or objects from falling through the access port of the walkway when the baggage enclosure is lowered to a lower station at a height that is elevationally below the access port of the walkway.

25. A baggage handling unit according to claim 24, wherein the controllably moveable barrier comprises a roll-down door.

26. A method of retrofitting an existing passenger boarding bridge having a foundation, comprising;

- providing a baggage handling unit including a support configured for engaging a mounting structure of the foundation and including a mount configured for structurally coupling the baggage handling unit to a rotunda of the existing passenger boarding bridge;

- displacing the existing passenger boarding bridge from the foundation;

- mounting the baggage handling unit to the foundation via the support and the mounting structure of the foundation; and,

- structurally mounting the rotunda of the existing passenger boarding bridge to the baggage handling unit via the mount, such that the rotunda is supported at a position that is horizontally displaced from the foundation.

27. A method according to claim 26, wherein providing a baggage handling unit comprises providing a pre-assembled unit including a walkway, a baggage elevating element, the support, and the mount.

28. A method according to claim 26, comprising mounting a counter-weight to the baggage handling unit for counterbalancing an aircraft engaging portion of the existing passenger boarding bridge such that a moment imposed from the baggage handling unit to the foundation is at least partially compensated.

29. A method according to claim 26, wherein displacing the existing passenger boarding bridge comprises disengaging a rotunda column associated with the existing passenger boarding bridge from the mounting structure of the foundation.